



جامعة المدينة الإسلامية
ISLAMIC UNIVERSITY OF MADINAH

Scientific Research Plan

Bachelor of Science in Chemistry Program

Chemistry Department

College of Science - Islamic University of Madinah

1447 H



Chemistry Department

College of Science

Islamic University

The Scientific Research Plan for the Bachelor of Science in Chemistry Program

2025/2026AD - 1447AH



**Table of contents**

Contents	Page
Introduction	5
SUMMARY OF THE RESEARCH PLAN	6
Missions	8
University mission	8
Faculty mission	8
Program mission	8
Alignments	9
The alignment of the mission statement of the program with the mission statement of the Islamic University of Madinah (IUM)	9
The alignment of the mission statement of the program with the mission statement of the Faculty of Science	10
The alignment of the program learning outcomes (PLOs) with the mission statement	11
The alignment of program goals with the faculty goals	12
The alignment of program goals with the University's goals	13
The alignment of the mission statement with the program goals	16
Setting research themes for the Department of Chemistry	17
Research Priorities of the Department of Chemistry	18
Executive Plan of the Research Plan	19
Research Plan Follow-up Form	20



Introduction

Since its inception, the Department of Chemistry at the Faculty of Science at the Islamic University of Medinah has harnessed all its capabilities considering the high care given by the Highness to education to enable the people of the country to arm themselves with science and knowledge. The Bachelor of Science in Chemistry program followed this approach in accordance with its vision and mission. It worked to develop its capabilities to keep pace with the modern scientific developments experienced by Saudi society. The current research plan for the Department for 1446 H is based on the values of our true religion and is derived from the university's third strategic plan (2022-2026 AD) and the research implementation plan for the College of Science (2022-2026 AD). The Department of Chemistry has taken it upon itself to strive in various fields of chemistry and its applications. This is based on its strengths and dependent on the efforts of its employees to occupy its position among the best chemistry departments locally and internationally. This research plan is considered a document of commitment from the program to benefit from science and knowledge, and the plan is the result of consultations conducted on a large scale between faculty members in the various chemistry specializations in the program, beneficiaries, stakeholders, and experts in the field of development and quality. It was based on opening new horizons while continuing to focus on the quality of the educational and research environment to ensure the quality and efficiency of graduates with high-quality standards of creativity and competitiveness in their field of specialization, to meet the requirements of the labor market in light of the new globalization system. The department was recently awarded a full academic accreditation for the bachelor's program after obtaining conditional accreditation through careful application of quality rules and the development of its study plan and activities in scientific research and community service. In light of this research plan, the department will continue to work, trusting in God first and then in ourselves and our capabilities to move forward to the position it deserves among the various chemistry departments internally and externally over the coming years, God Almighty willing and granting success.



SUMMARY OF THE RESEARCH PLAN

The research plan of the BS program at the Department of Chemistry at the Faculty of Science at the Islamic University of Medina is based on the following:

- The vision and mission of the University, Faculty, and Department.
- The University's third strategic plan.
- The University's strategic research plan 2022-2026 AD.
- The faculty's research executive plan.
- Analyzing the internal work environment, which includes identifying the most prominent capabilities and challenges.
- Scientific publishing by faculty members in the department for previous years.

❖ Analysis of the department environment.

STRENGTHS:

- The presence of an elite group of distinguished faculty members in various chemistry specializations serves the educational and research processes.
- Diversity of the program's teaching staff from different scientific schools.
- Providing a modern infrastructure for the program, including equipped classrooms and various laboratories containing many advanced research devices with high specifications.
- Providing continuous support from the university and college to serve scientific research.
- The Bachelor of Science in Chemistry program obtained conditional academic accreditation.
- The existence of a postgraduate program at the master's level.
- Linking the evaluation of faculty members' job performance to the research output.
- The presence of awards was allocated by the university for scientific research.
- The possibility of research cooperation between members of the college's scientific departments and the formation of integrative research groups.

**CHALLENGES:**

- Lack of public opinion's knowledge of the existence of applied scientific colleges at the Islamic University.
- The small number of faculty members in the department.
- Weak scientific and research cooperation and scientific partnerships with research centers and local, regional, and international academic institutions.
- The lack of research laboratories compared to the scientific specializations of faculty members, and the presence of some technical problems in some scientific devices.
- Weak student research contribution in the postgraduate stage due to the newness of the department's master's program.
- Lack of participation in conferences and research seminars.
- There are no research awards or end-of-year honors at the college level.
- Lack of programs to attract researchers.
- The support provided by support agencies is limited to a limited number of faculty members.
- Increasing the administrative burden on employees of scientific departments.
- Lack of support for payment of publishing fees in classified journals.
- The college does not have a special budget to support graduate programs in scientific departments.



The University Mission

Excellence in the knowledge industry by providing an educational and research environment that stimulates innovation, enables entrepreneurship, and supports sustainable development and community partnership.

The Faculty Mission

Providing distinguished academic and professional programs in a scientific and research environment that stimulates innovation, sustainability and community partnership, contributing to the knowledge industry and preparing qualified cadres for the labor market.

The Program Mission

Preparing qualified graduates in the field of chemistry as per the demands of the labor market by providing a distinguished academic program in an educational and research environment that stimulates innovation, sustainability, and community partnerships to contribute to the knowledge industry.

The alignment of the mission statement of the program with the mission statement of the Islamic University of Madinah (IUM)



University mission	Excellence in the knowledge industry	by providing an educational and research environment that stimulates innovation	enables entrepreneurship and supports sustainable development	and community partnership.
Program Mission				
Preparing qualified graduates in the field of chemistry as per the demands of the labor market	✓		✓	✓
by providing a distinguished academic program in an educational and research environment		✓		✓
that stimulates innovation, sustainability,		✓	✓	
and community partnerships to contribute to the knowledge industry.	✓			✓

Comment:

The goals of the university and the BSc Chemistry Program are aligned to promote community engagement, sustainability, and innovation. This program will equip enrolled students with new knowledge and essential workforce skills. Its mission closely aligns with that of the Islamic University of Madinah in various areas. While emphasizing the distinct features of the BSc Chemistry Program, it also remains consistent with the broader mission of the university.



The alignment of the mission statement of the program with the mission statement of the Faculty of Science

Faculty mission	Providing distinguished academic and professional programs	in a scientific and research environment that stimulates innovation, sustainability, and community partnership	contributing to the knowledge industry	and preparing qualified cadres for the labor market
Program Mission				
Preparing qualified graduates in the field of chemistry as per the demands of the labor market	✓			✓
by providing a distinguished academic program in an educational and research environment	✓	✓		
that stimulates innovation, sustainability,		✓		
and community partnerships to contribute to the knowledge industry.		✓	✓	

Comment:

The mission of the BSc Chemistry Program is closely aligned with that of the Faculty of Science. Both prioritize providing outstanding academic services within a scientific environment that encourages creativity, sustainability, and community engagement. A common goal of both missions is to prepare skilled graduates for the workforce while contributing to the knowledge sector. The program's mission is clearly in harmony with the Faculty of Science's mission.



The alignment of program goals with the faculty goals

Program goals	1. Improving the quality of learning outcomes	2. Developing the abilities of the staff and members attracting the distinguished ones.	3. Motivating staff and members to get involved in innovative research within the domains of the university's	4. Enhancing research partnerships with related sectors.	5. Fulfilling the community's needs for chemistry-related careers in the evolving labor market.
Faculty goals					
1. Achieving beneficiaries' satisfaction	✓	✓			✓
2. Developing the teaching and learning experience in an environment that stimulates creativity and innovation	✓		✓		
3. Improving the quality of learning outcomes	✓				
4. Developing the scientific research system		✓	✓	✓	
5. Enhancing integration and partnerships with relevant institutions and authorities by aligning specializations with the needs of the labor market				✓	✓
6. Enhancing communication with faculty graduates					✓
7. Developing community partnerships and sustainable development					✓

Program goals	1. Improving the quality of learning outcomes	2. Developing the abilities of the staff and members attracting the distinguished ones.	3. Motivating staff and members to get involved in innovative research within the domains of the university's	4. Enhancing research partnerships with related sectors.	5. Fulfilling the community's needs for chemistry-related careers in the evolving labor market.
Faculty goals					
8. Developing an effective governance system					
9. Developing the skills and capabilities of college employees		✓	✓		
10. Developing faculty procedures and its digitization					

Comment:

There is a strong alignment between most of the faculty goals and the Program goals. The faculty's focus on delivering high-quality education, fostering innovation, and preparing graduates for successful careers in chemistry directly supports the program's overall goals.



The alignment of program goals with the University goals:

University Objectives	Program's Goals				
	1.Improving the quality of learning outcomes	2.Developing the abilities of the staff members and attracting the distinguished ones.	3.Motivating staff members and students to get involved in innovative research within the domains of the university' s	4.Enhancing research partnerships with related sectors.	5.Fulfilling the community's needs for chemistry-related careers in the evolving labor market.
1.Enhancing academic reputation	✓				
2.Consolidating the middle and moderate approach of Islam					
3.Increase the satisfaction of beneficiaries and stakeholders	✓	✓			✓
4.Raising the efficiency of financial spending					
5.Sustainability of the university's financial resources				✓	
6.Developing the teaching and learning experience in an environment that stimulates creativity and innovation	✓		✓		
7.Improving the quality of learning outcomes	✓				
8.Developing the system of scientific research, innovation and entrepreneurship			✓	✓	



University Objectives	Program's Goals				
	1.Improving the quality of learning outcomes	2.Developing the abilities of the staff members and attracting the distinguished ones.	3.Motivating staff members and students to get involved in innovative research within the domains of the university's	4.Enhancing research partnerships with related sectors.	5.Fulfilling the community's needs for chemistry-related careers in the evolving labor market.
9.Enhancing integration and partnerships with relevant institutions and entities				✓	
10. Enhancing communication with graduates					✓
11. Developing community partnerships and sustainable development				✓	
12. Developing products and services with financial returns					✓
13. Develop an effective governance system					
14. Raising human capabilities in a stimulating work environment		✓			✓
15. Improving technologies and infrastructure					

Comment:

The program is highly consistent with the university's goals, directly supporting several key goals such as enhancing the university's reputation, improving learning outcomes, and producing graduates who can positively impact the workforce and contribute to community development.



The alignment of the mission statement with the program goals:

Goals	Mission			
	Preparing qualified graduates in the field of chemistry as per the demands of the labor market	by providing a distinguished academic program in an educational and research environment	that stimulates innovation, sustainability	and community partnerships to contribute to the knowledge industry.
1. Improving the quality of learning outcomes	✓	✓	✓	
2. Developing the abilities of the staff members and attracting the distinguished ones.		✓		✓
3. Motivating staff members and students to get involved in innovative research within the domains of the university's research priorities.	✓	✓	✓	
4. Enhancing research partnerships with related sectors.		✓		✓
5. Fulfilling the community's needs for chemistry-related careers in the evolving labor market.	✓			✓

Comment:

The program's goals are well aligned with the mission statement. The program's goals are designed to achieve the domains of the program's mission which are centered on preparing qualified graduates, providing stimulating educational and research environments, and stimulating innovation, sustainability and community partnerships.



❖ **Setting research themes for the Department of Chemistry:**

This stage relied on extrapolating research fields from the views of faculty members through several meetings and discussions between faculty members.

To implement this phase, the following procedures are followed:

- Holding several meetings between faculty members from the Departments of Chemistry to determine the main fields of scientific research and priorities following the guidelines of global and local research, the University's strategic research plan, the requirements of the Saudi society, and the vision of the Kingdom 2030.
- The plan preparation team has listed the research topics proposed by the faculty members, following the unified regulations of the Deanship of Scientific Research in Saudi universities and the strategic plan of the university.
- Holding the Departmental council to adopt the suggestions of the faculty members from the proposed research fields.

❖ **Determining research priorities.**

This phase was accomplished through the following actions:

- Notifying the staff members at the Department of Chemistry to develop a plan of research activities covering different research areas with schedules and indicators of achievement for these activities.
- The plan preparation team collected the plans and merged them into one plan, which includes: the research field, the different activities, the duration of the implementation and its mechanisms, the body responsible for implementation, the indicators of achievement, the expected outputs of the activity, and the benefit of the outputs.
- The plan preparation team drafted the plan in its final form to include the introduction, objectives, standards, procedures followed in its preparation, its references, and the schedule of the plan.
- Adopting the plan from the departmental councils and the faculty council for its implementation.



❖ **Publishing and follow-up:**

- Publish the plan on the Department of Chemistry website.
- Design a model to follow up the implementation of the research plan.

❖ **Control criteria of the plan.**

The research plan of the Department of Chemistry is based on the following criteria:

- Keep up with the latest research trends in the specialty.
- Focus on topics that serve the community and solve its problems.
- Considering the general orientation of publishing in the specialized fields, to enhance the possibility of publishing topics that are within the priorities identified in internationally renowned scientific journals.

❖ **Bodies responsible for the implementation of the plan and follow-up:**

Scientific research committee at the Department of Chemistry.

❖ **Research priorities of the Department of Chemistry:**

The research priorities of the BS program's research plan at the Department of Chemistry are as follows:

1. **Green and environmental chemistry**
2. **Water treatment/metal corrosion**
3. **Renewable energy/photochemistry and radiation.**
4. **Nanomaterials/nanocomposites/polymers and their applications.**
5. **Preparation of heterocyclic compounds and metal complexes and their applications.**
6. **Biochemistry and drug discovery.**



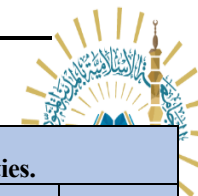
❖ Executive Plan for the Research Plan.

University's Research Domain	Chemistry Department Research Priorities	Total Target	Annual Targets					The entity responsible for the implementation	Implementation requirements	Possible problems
			2022	2023	2024	2025	2026			
Environment and its issues	Green and environmental chemistry	30	5	5	6	7	7	Chemistry Dept.	Financial support + research laboratories	Insufficient financial support + lack of laboratory equipment
	Water treatment/metal corrosion	25	4	5	5	5	6			
Sustainable development and ways to achieve it	Renewable energy/photochemistry and radiation	39	7	7	8	8	9			
Modern technology and its applications	Nanomaterials/nanocomposites/polymers and their applications	34	6	6	7	7	8			
Basic sciences and its applications	Preparation of heterocyclic compounds and metal complexes and their applications	31	5	5	6	7	8			
	Biochemistry and drug discovery	34	6	6	7	7	8			
Total target		193	33	34	39	41	46			



❖ Research Plan Follow-up Form.

University's Research Domain	Chemistry Department Research Priorities	Total Target		Annual Targets										Achievement percentage	Implementation constraints
				2022		2023		2024		2025		2026			
		T	A	T	A	T	A	T	A	T	A				
Environment and its issues	Green and environmental chemistry	30		5		5		6		7		7			
	Water treatment/metal corrosion	25		4		5		5		5		6			
Sustainable development and ways to achieve it	Renewable energy/photochemistry and radiation	39		7		7		8		8		9			
Modern technology and its applications	Nanomaterials/nanocomposites/polymers and their applications	34		6		6		7		7		8			
Basic sciences and its applications	Preparation of heterocyclic compounds and metal complexes and their applications	31		5		5		6		7		8			
	Biochemistry and drug discovery	34		6		6		7		7		8			
	Total	193		33		34		39		41		46			



Program GOAL 3: Motivating staff members and students to get involved in innovative research within the domains of the university's research priorities.								
Strategic Goal of the University	Executive Goal of the College	Initiative	Activities	Responsible	Duration		KPIs	Target
					from	to		
Developing the system of scientific research, innovation, and entrepreneurship	Developing the scientific research system	Providing a stimulating research environment	<ol style="list-style-type: none"> 1. Preparing a scientific research plan and its annual follow-up report 2. Honoring outstanding researchers according to approved mechanisms. 3. University publication awards. 	scientific research committee	Sep. 2025	June 2026	<p>KPI-P-09: Percentage of publications of faculty members</p> <p>KPI-P-10: Rate of published research per faculty member</p> <p>KPI-P-11: Citations rate in referred journals per faculty member</p> <p>PI-08: Number of Published and Accepted Research</p>	

تمت بحمد الله،

Prepared by:

The Scientific Research Committee of the Department of Chemistry